

23

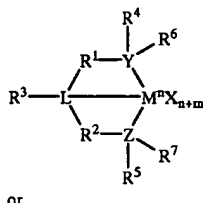
We claim:

1. A process for polymerizing olefin(s) in the presence of a catalyst system comprising a Group 15 containing bidentate or tridentate ligated hafnium catalyst compound, wherein the hafnium metal atom is bound to at least one leaving group and to at least two Group 15 atoms, and wherein at least one of the at least two Group 15 atoms is bound to a Group 15 or 16 atom through a bridging group; and a bulky ligand metallocene catalyst compound.

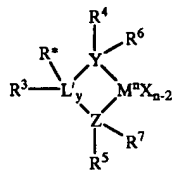
2. The process of claim 1 wherein the bridging group is selected from the group consisting of a C₁ to C₂₀ hydrocarbon group, a heteroatom containing group, silicon, germanium, tin, lead, and phosphorus.

3. The process of claim 2 wherein the Group 15 or 16 atom may also be bound to nothing, a hydrogen, a Group 14 atom containing group, a halogen, or a heteroatom containing group, and wherein each of the two Group 15 atoms are also bound to a cyclic group and may optionally be bound to hydrogen, a halogen, a heteroatom, a hydrocarbyl group, or a heteroatom containing group.

4. The process of claim 1 wherein the Group 15 containing hafnium compound is represented by the formulae:



or



wherein M is hafnium;

each X is independently a leaving group;

y is 0 or 1;

n is the oxidation state of M;

m is the formal charge of Y, Z and L or of Y, Z and L';

L is a Group 15 or 16 element;

L' is a Group 15 or 16 element or Group 14 containing group;

Y is a Group 15 element;

Z is a Group 15 element;

R¹ and R² are independently a C₁ to C₂₀ hydrocarbon group, a heteroatom containing group having up to twenty carbon atoms, silicon, germanium, tin, lead, or phosphorus;

R³ is absent, a hydrocarbon group, hydrogen, a halogen, or a heteroatom containing group;

24

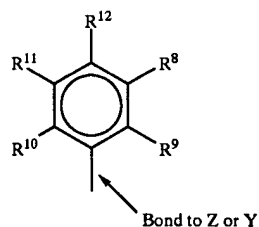
R⁴ and R⁵ are independently an alkyl group, an aryl group, a substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, a cyclic arylalkyl group, a substituted cyclic arylalkyl group or a multiple ring system;

R¹ and R² may be interconnected to each other, and/or R⁴ and R⁵ may be interconnected to each other;

R⁶ and R⁷ are independently absent, hydrogen, an alkyl group, halogen, heteroatom or a hydrocarbyl group; and

R* is absent, hydrogen, a Group 14 atom containing group, a halogen, or a heteroatom containing group.

5. The process of claim 4 wherein R⁴ and R⁵ are represented by the formula:



wherein R⁸ to R¹² are each independently hydrogen, a C₁ to C₄₀ alkyl group, a halide, a heteroatom, or a heteroatom containing group containing up to 40 carbon atoms, wherein any two R groups may form a cyclic group and/or a heterocyclic group, and wherein the cyclic groups may be aromatic.

6. The process of claim 5 wherein R⁹, R¹⁰ and R¹² are independently a methyl, ethyl, propyl or butyl group.

7. The process of claim 5 wherein R⁹, R¹⁰ and R¹² are methyl groups, and R⁸ and R¹¹ are hydrogen.

8. The process of claim 4 wherein L, Y, and Z are nitrogen, R¹ and R² are a hydrocarbon radical, R³ is hydrogen, and R⁶ and R⁷ are absent.

9. The process of claim 4 wherein L and Z are nitrogen, L' is a hydrocarbyl radical and R⁶ and R⁷ are absent.

10. The process of claim 1 wherein the catalyst system is supported on a carrier.

11. The process of claim 1 wherein the process is a continuous gas phase process.

12. The process of claim 1 wherein the process is a continuous slurry phase process.

13. The process of claim 1 wherein the olefin(s) is ethylene.

14. The process of claim 1 wherein the olefin(s) are ethylene and at least one other monomer having from 3 to 20 carbon atoms.

15. The process of claim 1 wherein the catalyst system comprises an activator.

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